BASIC MICROSCOPY CONCEPTS

PHASE CONTRAST ADJUSTMENT
The phase contrast is an illumination method to translate the reflective index or the optical thickness of the sample into a visual black and white contrast.

In the phase contrast the illumination is done through a ring shape slot, which is in correspondence to the ring inside the phase contrast objective. It is necessary a centering telescope for the correct alignment of the two rings, the rings have to be superposed.

The options for phase contrast illumination are, the simple slide or the simple attachment which are devices to be used with the standard condenser, or the phase turret condenser.

First put the phase contrast objective (i.e. 10X) in the optical path, focus the specimen and open the aperture diaphragm completely. In case you are working with a microscope with Koehler illumination please make the proper set-up.

Then put the ring illumination slot (1) into the light path and remove the standard eyepiece and put the centering telescope. The centering telescope helps to find the back focal plane, where both the illumination and objective rings can be observed (2).

Focus the rings operating the centering telescope focusing system, then using the centering keys of the illumination ring, move the illumination ring image until both rings are superposed (3).

Once the rings and perfectly aligned, remove the centering telescope and put again the standard eyepiece. Now the microscope is completely set up for phase contrast method with 10X objective.

For other phase contrast magnification objective the procedure must be repeated from the beginning taking into account the rings correspondence.